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SCIENCE NEWS LETTER

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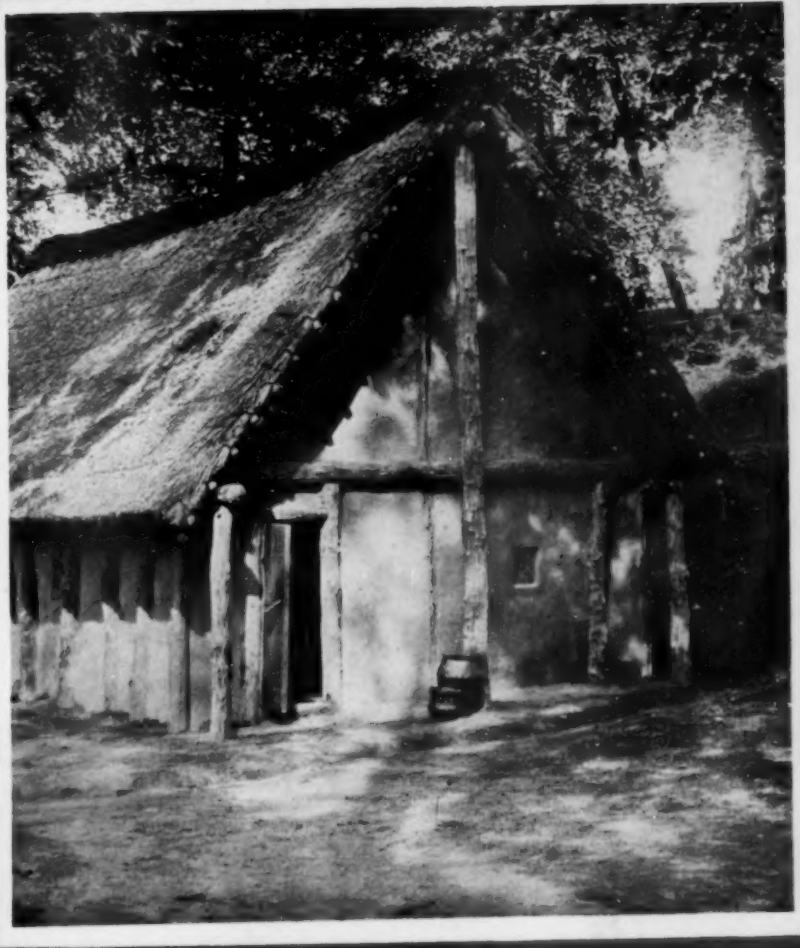
THE WEEKLY SUMMARY OF CURRENT SCIENCE •



November 13, 1937

Stone Age Home

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A SCIENCE SERVICE PUBLICATION

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DO YOU KNOW?

A sperm whale can eat a ton of food a day.

Cascade chrysanthemums are trained to flower in hanging pots.

New England forests are facing an epidemic of sawflies, insect pests that have been very destructive in Canadian timber land for several years.

Honey bees in the Colorado desert were recently observed gathering nectar from plants so tiny that a man could see them only with a magnifying glass.

Connecticut has started a plan of making automobile license plates last five years, by equipping each aluminum plate with a small colored insert for the proper year.

A new method of developing latent fingerprints on polished furniture and other greasy surfaces from which they could not be obtained under old methods has been reported to the American Chemical Society.

The National Park Service reports that a squirrel in the Southwest was recently seen swimming in a creek, after which the animal dug a hole in the sand and dried itself by curling up in the hole and kicking sand over itself.

Italy is celebrating the bi-millenary anniversary of Augustus, who founded the Roman empire.

London expects to reduce the noise in tubes and tunnels by 60 per cent, as a result of welding together 440 track miles.

The temperature is 210 degrees—almost boiling—at a depth of 9,000 feet in a well drilled for oil in Boulder County, Colorado.

A new high-powered Army airplane is christened the Aircuda, because it suggests the fighting fish, the barracuda, in speed and power of weapons.

Business girls are losing interest in reducing diets, according to a life insurance company that made a survey of about 2,600 "white collar" workers.

A nearsighted child is likely to grow more so, with advancing age; but if he is given proper optical and hygienic care the nearsightedness can usually be kept to the minimum.

The wood-roach lives on wood but cannot digest it direct, so has in its throat tiny one-celled protozoan animals that act on the raw wood as saliva does on food in humans.

WITH THE SCIENCES THIS WEEK

Most articles are based on communications to Science Service or papers before meetings, but where published sources are used they are referred to in the article.

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SOCIOLOGY
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XYLANTHROPOLOGY
What is the origin of the cigar store Indian? p. 314.

PSYCHOLOGY

Psychology Group Issues Manifesto Against War

No Scientific Proof Exists for View That War Is Inevitable or Due to Man's "Aggressive Instincts"

WAR IS NOT inevitable and not part of "human nature."

This is the Armistice Day pronouncement of a dozen psychologists from eleven universities who form the council of directors of the Society for the Psychological Study of Social Issues.

Ninety per cent. of several hundred American psychologists, polled by the society, join in denying that any proof exists for the view that man's "aggressive instincts" lead to war.

Society does not tolerate the settling of individual disputes by fighting.

As soon as war is declared, young men are told to kill other men, whereas we spend years teaching the sanctity of human life.

These are points made in the psychological manifesto.

The psychologists also charge that those who fight are prevented from knowing the real reasons for the war and are artificially motivated by propaganda often composed of utter lies.

"There is no psychological reason for wars to continue if we learn how to discount the propaganda of war-makers, and how to insist upon the peaceable adjustment of international conflicts," says the statement.

The statement is subscribed to by the entire council of the society, which consists of the following psychologists: Drs. Gordon Allport, Harvard University; J. F. Brown, University of Kansas; Hadley Cantril, Princeton University; Leonard Doob, Yale University; H. B. English, Ohio State University; Franklin Fearing, University of California (Los Angeles); George W. Hartmann, Columbia University; I. Krechevsky, Swarthmore College; Gardner Murphy, Columbia University; T. C. Schneirla, New York University; Ross Stagner, University of Akron; E. C. Tolman, University of California (Berkeley). The complete text follows:

The Text

"The celebration of this Armistice Day, 1937, should not be allowed to pass without a serious consideration by all Americans of the dangers of another war. Of course everybody is opposed to war! But undeclared 'wars' are now raging in Europe and in Asia, and no one can deny that we are in a situation which threatens war.

"Faced with this grave set of circumstances, many people will say, 'War is inevitable; it is part of human nature to have wars.'

"We, as psychologists, protest most emphatically against the common belief that wars are necessary results of 'human nature.' This opinion is without scientific foundation. There is no evidence to justify it. In a recent poll of several hundred American psychologists, all of whom have studied the instinct question thoroughly, over 90 per cent. denied that any proof existed for the view that man's instincts lead to war.

"Not only is the inevitability of war unsound psychology; it is also a handicap to peace efforts. (*Turn to Page 318*)

INVENTION

Original Bell Phonograph Unsealed After 56 Years

A VOICE sounded across fifty-six years when the first successful phonograph ever built, silent for more than half a century, was played at the Smithsonian Institution in Washington.

Deposited in a sealed box in the vaults of the Institution in 1881, the phonograph was brought out into the light of day and a record deposited with it was reproduced through a modern loudspeaker.

Descendants of Alexander Graham Bell, co-inventor, looked on as the grandfather of all sound recording devices now in commercial use was lifted out of the box in which it had

FIRST PHONOGRAPH

Silent for half a century, the first phonograph is opened in the presence of the daughters of the inventor Alexander Graham Bell, his great-grandson, and Dr. C. G. Abbot, secretary of the Smithsonian Institution.

rested through all the fifty-six years.

Though difficult to understand at first, the voice on that aged wax cylinder, "There are more things in heaven and earth, Horatio, than are dreamed of," resounded clearly through the Regents Room of historic Smithsonian.

Bell and the two co-inventors, Chichester Bell and Charles Sumner Tainter, had placed the "graphophone," as they called it, and other apparatus in three sealed boxes with the Institution in anticipation of a court battle over priority in the invention of the phonograph. They left instructions that it was not to be opened unless instructions were given by two of the three inventors.

Both Bells are dead now, but 84-year-old Tainter, an invalid at San Diego, Calif., ordered the Institution to open the boxes. The ceremony was once postponed because permission had not been obtained from all of Bell's descendants.

Sealed in a metal-covered wooden case half the size of an orange crate, the "graphophone" was packed in with a rubber speaking tube for making records and the electrotype matrix for an early phonograph record. But the rubber tube had long since hardened and the copper plate long since turned green with age.

Two other boxes, containing a model of the "photophone," the first device ever to transmit the human voice without wires and based on the same principle as the talking picture today, were opened at the same time.

The photophone made use of one of the earliest "electric eyes" to convert a beam of light, controlled by the speaker's voice, back into sound again. The speaking tube with it, too, was stiff with years.

Mrs. David Fairchild and Mrs. Gilbert Grosvenor, both daughters of inventor Bell, who is noted for the invention of the telephone, were with Dr. C. G. Abbot, secretary of the Smithsonian Institution, and T. H. Beard, research director of the Dictaphone Company, when Mr. Beard set to work on the case containing the "graphophone" with a screw driver. A few minutes of work and the machine was in full view.

A phonograph recording machine was patented by Thomas A. Edison four years before, but it was not commercially successful. It used tin foil wrapped around a cylinder instead of the wax cylinder devised by the Bells and Tainter. The tinfoil cylinder has passed completely out of use, while the wax cylinder is still used for office dictation machines, discs made of wax and other materials for phonographs.

Science News Letter, November 13, 1937

SOCIOLOGY

Women Produce Large Share Of Family Income in America

One Out of Ten Families Are Headed by Women; A Third of Women Wage Earners Keep Homes as Well

THE hand that rocks the cradle not only rules the world but brings home the bacon.

Women in America today, whether they pound a typewriter or cook the family dinner, produce a large share of the family living, Miss Mary Elizabeth Pidgeon, chief of the research division of the Women's Bureau, U. S. Department of Labor, has found.

Women are at the head of one out of every 10 families in the United States, she found. Probably more than one-tenth of the nearly 11,000,000 employed women are the entire support of families of 2 or more persons. More than a third of these are home-makers as well.

The housewife herself, working at least a 50-hour week every week of the year, makes an enormous contribution to the family income, but one that is difficult to put into dollars and cents. The cost of her labor in preparing the family meals according to one estimate is $1,167 a year. This is based on 15 cents worth of labor per meal—a very cheap estimate, Miss Pidgeon points out. If preparing the family meals represents about one-third of the housewife's services, then the money value of her work would run to over $3,500 a year.

Women, by going into industry and taking jobs outside the home, have not forced men out of jobs, it appears from Miss Pidgeon's findings. Women found employment outside the home primarily because of the shift from household to factory manufacture or from hand skills of women to machine processes. It is not a question of women's taking jobs from men but of the adaptation of the sexes to the work of the world.

No Replacement

"Ordinarily the jobs performed by the two sexes differ and hence replacement as such does not occur," she states.

Where employment of women does increase though that of men may decline, it is due, Miss Pidgeon finds, to changes in process and the lower wage customarily paid women.

Miss Pidgeon's study was made at the request of the following 10 large national organizations of women: American Association of University Women, American Home Economics Association, Interprofessional Association, National Board of Young Women's Christian Association, National Consumers' League, National Council of Catholic Women, National Council of Jewish Women, National Federation of Business and Professional Women's Clubs, National League of Women Voters, National Women's Trade Union League.

Science News Letter, November 13, 1937

MUSEUM SCIENCE

Visitors Can Turn Lever And Find Length of Lives

HOW long are you probably going to live? How does a cut finger heal? What happens when it gets infected? Where is that sacro-iliac joint that got out of whack and doubled you up with backache the other day? What is the

TOUCH

The design on this hand model shows where the touch corpuscles, nerve-endings sensitive to the touch, are located. It is on display at the new "Story of Man" Exhibition.

MUSCLE AND BONES

This strange looking skeleton is an object lesson of the new exhibit at the Museum of Science and Industry in New York.

scientifically approved way of brushing the teeth?

The answers to these and hundreds of other questions everyone has about the human body and its needs appear in the new exhibit at the New York Museum of Science and Industry.

The exhibit, planned so that visitors can push buttons and pull levers and then watch the wheels go around, tells the "Story of Man." The material was constructed abroad for the Oberlaender Trust and is lent to the Museum for its first showing in America.

Most interesting, probably, is the exhibit which enables visitors to predict their own length of life. You turn a lever until your present age and your sex show on two dials. Then you turn the lever again and a third dial tells the age to which you will probably live, based on life expectation figures.

Another unusual exhibit lets the visitor do a little blood mixing of his own and understand that complicated matter of the blood groups, so essential in blood transfusions. You can see for yourself how the blood serum and blood cells mix if the blood samples are from compatible groups, and how the cells clot dangerously together if serum from blood of an incompatible group is added.

A fearsome model that looks like a Hallowe'en nightmare is the man of muscle and bone—a skeleton with red strips representing the muscles of the body. Even more peculiar, looking, in fact, like an electrical man, is the figure that is half bony skeleton and half yellow wires. This model shows all the nerves on half the body.

Beginning with a model, enlarged 200 times, of the tiny egg from which human life starts, the exhibit shows the development of the body and all its organs and how they function.

Science News Letter, November 13, 1937

MEDICINE

High Blood Pressure Cause Still Unsolved Problem

Type Which Affects Most Hypertension Patients Seems Distinct From Other Diseases and Is Often Fatal

HIGH blood pressure is still an unsolved medical problem, it appears from discussions at the Tenth Annual Graduate Fortnight of the New York Academy of Medicine.

The condition is "a clinical sign, not a disease," Dr. Irvine H. Page of the Lilly Clinical Research Laboratory, Indianapolis, pointed out. "It is therefore not surprising that its causes are varied."

Many of the conditions which can cause high blood pressure are known, Dr. Page continued, but the number of patients in whom the cause is known is becoming small. The majority of patients now are suffering from a type of high blood pressure known medically as essential or malignant hypertension. The cause of this type is not known. It is called essential because it does not seem to be due to other diseases but almost to be a disease in itself, and the adjective malignant is used to indicate that it is always fatal.

Both the kidneys and the nervous system seems to be involved in the origin of high blood pressure. It may be, Dr. Page said, that the nervous system is over-active and "showers impulses" on normal blood vessels, or the reverse may be true, that the nervous system is normal but the blood vessels are overactive in their response to nerve stimulus. Neither of these possibilities, however, has been proved.

Surgical treatment of high blood pressure is still in the experimental stage, Dr. George J. Heuer, professor of surgery at Cornell University Medical College, said.

"The results of surgical treatment," he said, "must be studied over a period of years before they can be evaluated."

"The cause of hypertension is not yet known," Dr. Heuer said. He believed that probably no single cause is responsible for its initiation. Reporting on the experiments done on animals and on observations made on humans, he said that these "fail to indicate definitely that any of the glands of internal secretion, such as the hypophysis, adrenal, ovary, thyroid or pancreas are primarily at fault." Nor did he believe that that the central nervous system could be blamed.

Although surgical treatment of hypertension has not been established, nevertheless this procedure has effects on some of the manifestations of the disease, according to Dr. Heuer.

"What surgical procedure will prove to be the most productive of lasting benefit consistent with reasonable safety to the patient remains at the moment undecided," Dr. Heuer said in conclusion.

Kidney Disease

A kidney disease which occurs chiefly in young adults and children of flabby physical type and which can be cured although its cause is unknown was described by Dr. Albert A. Epstein of New York University College of Medicine.

The disease has the name nephrosis

and is not the same as nephritis, another kidney disease for which the cause is known. Characteristic symptoms of nephrosis, Dr. Epstein said, are edema or dropsy, decrease of kidney excretion and presence of albumen in the excretion.

The disease, according to Dr. Epstein, occurs most frequently in young adults and children.

"The individuals particularly prone to this malady," he said, "are of a peculiar flabby type—some being definitely obese before the disease is discovered."

While in most cases the disease begins insidiously, occasionally it is ushered in by an infection, or it may occur during or after pregnancy or in the course of some gland disturbance, notably thyroid disorder.

"Experience teaches," Dr. Epstein said, "that although its etiology is uncertain and its duration is usually long, it is amenable to treatment and cure. In essence, genuine nephrosis represents a subversion of protein metabolism."

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GENETICS-PSYCHOLOGY

Why Do the Quints Differ? A Puzzle For Science

The Five Little Dionnes, So Much Alike in Looks, Are Not the Same in Personality or in Abilities

THE "QUINTS" have provided science with one of its most interesting puzzles of current years. They are "identical," that is, they came from the same egg in their development before birth. They are "more alike than five peas in a pod."

Yet they do have differences in ability and personality. Why? Several of the 200 scientists and educators who attended the Toronto conference (Oct. 30) on the Dionne quintuplets have analyzed this problem in special statements to Science Service.

Quintuplets "Identical"; Biologists Report Tests

By DR. JOHN W. MacARTHUR
University of Toronto geneticist

THE DIONNE Quintuplets are an identical or monozygotic set, after all. This is the conclusion reached by Dr. N. H. C. Ford, biologist, of the University of Toronto, and myself and announced Oct. 30 to the group of scientists and public officials assembled to hear reports of researches on the biology and psychology of the famous quintuplets.

The chief problem was to discover as certainly as possible the interrelations of the members of the set, and decide whether they were all related as fraternals, as identicals, or were a mixed set, composed of both fraternal and identical pairs. The latter origin was suggested, in SCIENCE NEWS LETTER of Sept. 1, 1934, as by far the most probable origin.

The new evidence that all five are division products of the same fertilized egg or embryo was derived from as many inherited characters as it was possible to study in the quints and some of their older brothers and sisters.

In a family where faces, ears, eyes, hair and skin characteristics vary over a wide range, the quintuplets are remarkably uniform, and any two of them proved as much alike as identical twins. The five are so confusingly similar in facial features that few can consistently identify them correctly, except after becoming intimately acquainted with small individual differences in the form of the faces, ears, teeth, etc. Throughout the set the iris color is the same medium brown flecked and bordered with gray. There are the same long, much-curled dark brown eyelashes and the light brown eyebrows; reddish brown, slightly wavy hair; and the fair, rosy and unfreckled complexion. And they all belong to the same blood group, O.

Particular emphasis was laid on the resemblance of the hand and sole prints, since these are fixed before birth and constant through life. In addition to a general likeness as close as in identical twins, the quintuplets all share two rare features; namely whorls among the palm patterns, and a mild form of syndactyly of the second and third toes on each of the ten feet.

There is little mirror-imaging in the set; only Emilie appears to be left handed, and only Marie's crown hair whorl turns clockwise. There is a hint that these two are products of the last division.

The right and left hands of any members of the set are less alike than one of her hands is like a hand of a sister; in the sib comparisons the opposite was the case.

Such close resemblance as the quintuplets show in many characters would not be expected unless they all carry the same inheritance, and this would occur only if all are identical.

From the medical literature some 60 other cases of quintuplet births were traced, among them at least one or two other monozygotic sets. Thus the Dionnes are unique only in the sense that they have survived past infancy, and as an unbroken set.

Since they all have a common inheritance, the differences which now exist or subsequently arise between them in physical, mental and social characters may be attributed to the influence of environment.

Too Soon To Tell How Quintuplets Will Turn Out

By DR. FRANK N. FREEMAN
**Professor of Educational Psychology
University of Chicago**

THE DIONNE quintuplets furnish the only case in the history of the world in which five persons who have exactly the same heredity have been tested and measured scientifically. At the conference held in Toronto, the first public report was made of the tests which show that the quintuplets are beyond doubt identical. This means that they came from a single egg cell which divided and re-divided until five separate and complete individuals were formed.

The identity of the quintuplets is shown most clearly by their fingerprints, in which all are remarkably alike and all different from their other sisters and brothers. They all, therefore, have exactly the same start in life. How are they going to turn out?

It is too soon to answer this question. At three years of age there are still many hidden possibilities in ability and personality. But enough is shown in the tests and observations now reported to show that these little girls who started out exactly alike are clearly different in abilities as well as in the leadership they exercise in their own group, in their emotional expression, in the way

they act when they are given directions by their nurses and teachers, in short, in their personality.

How they got to be different is still something of a scientific puzzle. Perhaps their individualities are in part a result of conditions occurring before birth that are beyond our control. Perhaps, however, they are partly the result of influences that we can discover and ultimately learn to control.

Studies of identical twins have shown that large differences in schooling may account for a difference equal to four years of mental growth. They have tested these twins only after the differences have occurred. The quintuplets are being studied by repeated tests through every stage of their growth. This should show how changes are brought about as well as the bare fact that they may be made.

It is to be hoped that the study of the quintuplets, so well begun, may be continued long enough to throw real light on this question.

Differences in Quints "Partly Artificial"

By DR. H. H. NEWMAN
Professor of Zoology
University of Chicago

THE MOST important result of the purely biological work of Drs. J. W. MacArthur and Norma H. Ford of the University of Toronto, is that they have conclusively diagnosed the quints as identical, derived through the division of a single embryo. The writer agrees with this diagnosis, which was necessary before the psychological studies would have much significance. Dr. William Dafoe's exhaustive account of the health, growth, nutrition, and care of the quints up till the present time is extremely valuable in the field of pediatrics.

Reports on the development of mental and emotional traits were also given at the University of Toronto conference by Dr. W. E. Blatz, director of St. George's School for Child Study and by his colleague Miss M. A. Millichamp. The most striking fact seems to be that all five little girls have developed individual characteristics and that there are fairly marked and consistent differences in mental ability. Whether these differences are the result of prenatal or unanalyzed factors beyond control was not determined.

That hereditary differences had arisen is an opinion abhorrent to biologists and to at least one psychologist, Dr. F. N. Freeman, of the University of Chicago. The writer can visualize no significant environmental differences in a closely coherent group in which care is taken to treat all alike. He regards the present differences as partly artificial. Whatever real and consistent differences remain seem to us to have been set before birth by inequalities of fetal nutrition or the workings of the asymmetry mechanism. The controversy at the conference was well conducted but the heredity-environment problem is still unsettled.

The general tenor of the speeches at the banquet of the conference was that the scientific program with the quintuplets should go ahead on an ever increasing scale and that the results already attained deserve the support of all agencies able to cooperate.

Many most commendatory remarks by all speakers at the conference attest the esteem in which Dr. A. R. Dafoe, "the country doctor," is held by all who know him.

Upon the occasion of the conference's special train trip to Callander for a visit to the quints, a second examination of the quints showed the writer that they are even more nearly identical physically today than they were a year ago, and confirms the conclusion first announced by Drs. MacArthur and Ford, that they are identical in their hereditary composition.

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GENERAL SCIENCE

10-Mile Shaft in Earth Is Called a Need of Science

SCIENTIFIC triumphs of the future —from production of super-men to the conquest of cosmic rays—were forecast at the annual dinner of the National Academy of Sciences.

When mankind has banished wars, science may hope for so ambitious a project as an international earth shaft 10 or 12 miles deep, said Dr. Arthur C. Parker, director of the Rochester Museum of Arts and Sciences, speaker at the dinner. Such a shaft, far beyond the present depth to which the earth has been probed, will enable scientists to study earth structure down where the mysterious cosmic rays have no influence. There, man can find out what it is like to avoid these cosmic bullets that bombard the earth from space.

When we get under the earth's skin, said Dr. Parker, we may possibly find that the cosmic ray is "the sperm of life."

Calling the study of hormones, secreted within the body, a challenge, Dr. Parker said:

"There is practical romance in this research for it means that the biologist of the future will have controls within his grasp that can produce the superman or the super-woman, but, whether man or woman will depend upon what derivative of cholesterol the bio-builder uses. One can imagine also what effect the use of this substance will have upon the writer of fiction. He will analyze the love between the man and the maid. 'She was filled with $C_{27}H_{45}OH$,' the writer will say, 'and he was energized by liberal amounts of $C_{19}H_{30}O_2$, which my dear readers, is so powerful that it sprouts combs on capons, so you can see what it did to our hero.'"

Fuller understanding of how the mind works, as master of the body, was also forecast by Dr. Parker, who said:

"We must look ahead for the true answer, though I am well aware that some psychologists will say they can answer now. Still, I am skeptical enough to believe that the real answer to this question will be one of the most startling achievements of this century."

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SURGERY

Signal Lamp on Forceps Gives Surgeon Go Signal

A NEW attachment to conventional surgical forceps that gives the surgeon a go-ahead signal during an operation by lighting a signal lamp, is one of the new devices demonstrated before the American College of Surgeons.

When foreign bodies, such as pieces of metal, are probed for, electrical connections on the prongs of the forceps will make contact and light the signal lamp only when the foreign matter is seized properly. If soft tissue such as muscles gets in the way, the light will not go on. The new instrument is always used in conjunction with X-rays.

Science News Letter, November 13, 1937

ASTRONOMY

Runaway Object Breaks Celestial Speed Limits

A RUNAWAY of the skies, which may be a new comet but is more probably a small asteroid, has been detected speeding far faster than celestial bodies have any real business to go, by a well-known German comet hunter, K. Reinmuth of Heidelberg, and reported to the international clearing house for astronomical discoveries in Copenhagen.

The object, whatever it is, was moving at a velocity of 64 minutes of arc a day when last observed. This is an indication that it is fairly close to the earth and is moving very fast. Its appearance through the telescope is reported as star-like. This lends support to the theory that it is an asteroid. Comets are usually rather diffuse and "fuzzy."

When discovered, the object was near the constellation Pisces. At first of the tenth magnitude, it later brightened to the eighth.

Science News Letter, November 13, 1937

BIOLOGY

Brilliant Popular Science Book Based on Lowly Worm

POPULAR imagination is perhaps a bit prone to picture natural history or biology as concerned with butterflies, bees, birds, blossoms, and other poetically pretty things. That such need not be the case, if the expositor has both knowledge of his subject and a flexible imagination, is given lively demonstration in a new book: Ascaris, the Biologist's Story of Life, by Prof. Richard Goldschmidt, formerly of the University of Munich but now of the University of California (Prentice-Hall).

He deliberately starts out with a creature which he describes as "a worm, and even worse, a parasitic worm inhabiting the intestines of man and animals." But by proper laboratory and literary manipulation he makes this degraded and even repulsive creature tell the basic story of all biology.

Prof. Goldschmidt's method is to take note about some part or property of his worm, make an excursion into other parts of the animal kingdom, and then return to the same humble starting-point for a new departure.

Thus, Ascaris has a skin; so have other animals, including ourselves. Of what use is a skin? To hold together what is inside it. Yes; but that is only part of the job. The skin also keeps out bad bacteria. The skin can renew or regenerate itself; this opens up the whole discussion of regeneration in lower organisms, that can grow not only new skin but new legs and even new heads.

Again, we animals all have nervous systems, with sense organs to supply stimuli. Ascaris furnishes a simple type, with all the fundamental necessities though without some of the "gadgets" that more highly evolved creatures can boast. And there is a fundamental likeness underlying all differences in blood system, digestive tract. In the end, poor despised Ascaris even introduces us into the mysteries of Mendelian genetics.

Science News Letter, November 13, 1937

MEDICINE

Tattoo Cornea of Eye With Gold and Platinum

A METHOD of tattooing the cornea of the eye with gold and platinum to improve vision was described by Dr. Ramon Castroviejo of Columbia Presbyterian Medical Center at the meeting of the American College of Surgeons.

This procedure, he said, is one of the few recent additions to surgery of the cornea which have proved valuable.

Tattooing the cornea actually dates back to the second century A. D. when Galen used a hot iron rod, powdered pomegranate bark and copper salts to make indelible coverings for opaque spots on the cornea. This part of the eye is the transparent layer that forms the outer layer of the eyeball. When superficial opaque spots develop on the cornea, especially near the pupil, they greatly interfere with vision, Dr. Castroviejo explained, by dispersing the light that passes through the translucent area. Tattooing is used to close up the spaces between the opaque spots and allow light to pass through a concentrated area.

Tattooing also has been used to improve the appearance of the eye in certain conditions, such as albinism of the iris, in which the eyes would be white instead of blue or brown or some in-between color.

India ink and many other substances were tried in corneal tattooing, Dr. Castroviejo said in his summary of corneal surgery. Gold was first used in 1911 and platinum in 1928. The metals, in the form of chlorides, are used in a solution which, after preliminary preparation of the eye, is placed on the opaque spot for two or three minutes. Then adrenalin chloride is added and the gold changes chemically so that a dark brown, almost black, coloring is produced.

Science News Letter, November 13, 1937

IN SCIENCE

AERONAUTICS

Water Tank To Be Used As Airship Wind Tunnel

AIDED by the Navy Bureau of Aeronautics, Dr. Arnold M. Kuethe and his associates of the Guggenheim Airship Institute are building a water tank which will serve as a wind tunnel for airships.

The tank, which will measure five feet by eight feet when completed and will be equipped with apparatus to simulate wind gusts by means of a water jet, will be used to test the behavior of airship models in gusts of wind, Dr. Kuethe reported, speaking at the ninth annual meeting of the Society of Rheology in Akron, Ohio.

A water tank and a submersible model of an airship must be used in the tests, he explained, because the model and the medium in which it is moving must have nearly the same density. A tiny "lighter-than-air" model would be too difficult to construct and handle.

The experiments may serve to throw new light on why many big airships of the past have been defenseless against storms.

Science News Letter, November 13, 1937

CHEMISTRY

New Process Sterilizes Wool Without Damage

A WAY to sterilize wool fabrics without injury to fibers is expected to become commercially applicable shortly because of research by three U. S. Department of Agriculture workers, Ruth Elmquist, James Kettering and Harry Humfeld.

The new process consists of heating the wool material either in the organic liquid xylene or Stoddard solvent and tetrachlorethylene. Any process previously used to kill microorganisms in wool also damaged the material itself.

Wool blankets and clothing need to be made germ free both to prevent spread of disease and to prevent damage to the wool itself by mildew. Hospitals, the Army and other organizations are expected to use the new process.

Science News Letter, November 13, 1937

ENE FIELDS

ENGINEERING

"Safety Headlight" Tilts When Auto Climbs Hill

A SAFETY automobile headlight, that automatically tilts so as always to shine on the road regardless of whether the automobile is climbing or descending or traveling along a level highway, has been patented by Paul Astorg, a Berkeley resident.

It is designed, its inventor states in the papers on which patent No. 2,096,777 was issued by the U. S. Patent Office in Washington, particularly to avert the situation of which all motorists have complained in the past. When an automobile equipped with standard lamps approaches the summit of a hill, its lights shine straight past the summit instead of on the road. The new type lamp, by pointing downward when the car is climbing, avoids this difficulty.

A standard headlamp is fitted into a special cylindrical mounting which allows it to swing to achieve the desired effect. The patent covers the mounting.

Science News Letter, November 13, 1937

PSYCHIATRY

Study Mental Effects Of Sex Crime Attacks

THE problem of sex crime is one which is receiving anxious attention in many localities, particularly in the large cities where it seems to be increasing. The deliberations of those groups of citizens, crime commissions, and law enforcement officials who have been considering the problem have been focused on the individuals committing such offenses.

In all the discussions, little has been said about the victims in the cases. Yet, in the case of little children, parents and teachers must have wondered just what would be the psychological effect of such an experience. Would it leave a lasting scar? Would the child be terrorized so that a permanent nervous ailment might result?

Partial reassurance is offered by a study recently made by Drs. Lauretta Bender and Abram Blau of Bellevue Hospital and the New York University Medical College of the mental condition of a group of eleven little girls and five boys who had been sent to Bellevue for treatment.

These children were not nearly so frightened or shocked as might be expected, the physicians report to the American Journal of Orthopsychiatry. Some were retarded in their personality development, some reverted to such baby-ish habits as thumb-sucking, but for the most part they did not seem seriously injured and responded well to treatment.

An interesting observation about these children is that nearly all are particularly charming, attractive youngsters as judged by adult standards. Most of them showed an abnormal craving for adult attention, due sometimes to deprivation of the normal satisfaction of tender parental love. It may not always be the "offender" who first seeks the acquaintance in cases of sex attack, but rather the child who is anxious to be friendly to the strange adult.

Parents, it seems, can help in the protection of their children by furnishing them with normal homes, affection, and suitable child companions.

Science News Letter, November 13, 1937

PARASITOLOGY

Diet For Turkeys Protects Against Disease

THE THANKSGIVING turkey or other holiday bird may in future be protected from a very serious disease by a slight alteration in his diet. While this may mean smaller fowl for holiday feasts, it will probably insure a more plentiful supply and certainly will be of immense saving to the poultry industry.

These seem to be the conclusions of a report, appearing just before the holiday season, of research by Dr. Elery R. Becker, of Iowa State College. (*Science*, Oct. 29)

Blackhead of turkeys, the most destructive and dreaded of all turkey diseases, which also afflicts other fowl, can be controlled by diet, although it is caused by a germ, Dr. Becker has found. The extreme severity of the disease, he reports, is due not only to infection with the germ of the disease but to the incorporation in the bird's diet of certain foods, notably powdered skim-milk, buttermilk and wheat middlings. These are used to stimulate the growth of the bird. A small amount of these may safely be fed the birds, but the amount in the usual commercial ration is too high.

Science News Letter, November 13, 1937

GEOLOGY

Dinosaur Didn't Lay Recently Found "Eggs"

DINOSAUR eggs recently reported found in a road excavation near Waterton Park, Alberta, were never laid by a dinosaur, and wouldn't hatch into anything, no matter how long incubated. Herbert Knight, superintendent of Waterton Lakes National Park, reports that the alleged dinosaur eggs are folded masses of sandy limestone.

Science News Letter, November 13, 1937

MEDICINE

Can't Blame Cancer On Civilization

CANCER is often said to be a disease of civilization and civilized man's way of life and especially the foods he eats are blamed for the increasing prevalence of cancer. Chief evidence for this line of argument consists of observations showing or seeming to show that cancer does not occur as often among primitive peoples as among the more highly civilized.

Doubt is now cast on this very point by the accidental discovery of considerable cancer in Haitians who died of heart disease. The people of Haiti, to be sure, are not primitive in the strict sense of the term, but their technical, economic and cultural levels are highly primitive when compared to those of the United States. Yet the gross incidence of cancer is much like our own.

Autopsy records indicating this have been reported to the American Journal of Cancer by Dr. Carl V. Weller of the University of Michigan. Dr. Weller was not looking for cancer. He was looking for signs of heart disease due to syphilis or yaws. He found cancer in 11 out of 174 cases. Since these patients had died of heart disease, they were less likely to have cancer than the general population of the same age. Yet a large percentage of them did.

A significant point is that the average age of the cases with cancer was 62 years. Not many Haitians or other primitive peoples live to the age at which cancer appears. When they do, they evidently are just as apt to have cancer as civilized peoples.

If cancer is a disease of civilized life, it is not because civilized life causes changes in the body that favor the development of cancer. It is, apparently, because civilized life enables the average man to live much longer than a primitive way of life does.

Science News Letter, November 13, 1937

XYLANTHROPOLOGY

Wooden Indians

The Old Cigar Store Emblem Stages a Comeback; Now Valued as Folk Art and Studied by Scientists

By EMILY C. DAVIS

THERE'S a new science coming to the fore. You might call it in plain English the Science of Wooden Man. And then again, you might coin a nice, scientific-sounding Greek name for it. Like this:

Xylon is Greek for wood.

Anthropology is Greek for the science of man.

So, Xylanthropology would be the Science of Wooden Man. Say it a few times and it reels right off your tongue.

The study of Wooden Man in America naturally takes in wooden Indians; and wooden white men, too—but we'll come to them later.

Americans who can recall life before the jazz age may admit remembering the wooden Indian era of our history. In those days, they can tell you, wooden Indians stood around quite ignored by science. They were just familiar figures on Main Street.

Almost every cigar store that could afford it had a silent Injun Chief or an Indian Maid—Pocahontas, of course—outside the shop door to welcome in the customers. Pocahontas with a bunch of wooden cigars in her hand was the first cigarette girl.

Those Indians held doorman jobs for about 200 years, and had their widest employment around 1850 to 1880. Then came the Wooden Indian depression era. Fewer and fewer were seen.

New Dignity

But now, the wooden Indians have staged a comeback in the public eye, with a new kind of dignity. They are hailed as interesting historic objects from an earlier American era. They are even classed as art antiquities. Collectors and museum curators treat them with care, and any time you meet one of these Indians out taking sun and rain in the face in front of a store these days, when you tour America, you can write home about it. That sight is rare.

Efforts to salvage the history of these figures, and their significance, are being made. The wooden dumbness of a cigar store Indian used to be a great target for jokes. Now, it is something to sigh over, that these painted redskins can't tell their experiences.

The Works Progress Administration is one group that is gathering xylanthropological data. As American folk art, cigar store Indians are included in the Index of American Design which the WPA is busily compiling. For years, Americans laughed at the wooden Indian school of art. Now, it turns out that many of these quaint carvings are not so bad, after all. Looked upon as folk art, they rate as "works made in this country of good and significant design."

The index will provide for the first time a panorama of American design in a big portfolio illustrated with 7,000 plates. It shows decorative designs found on American toys and textiles, old Southwestern spurs and old Philadelphia highboys, Sandwich glass from Cape Cod, figureheads carved for sailing ships—and cigar store Indians in all their finery of tobacco-leaf skirts and fancy feathers.

Valued Abroad

Foreign nations, it seems, have long realized the value of such compilations. They are useful as source material, not only to artists and designers but to historians and other research workers who need data on a country's art and craft traditions. So America is to have its index of art—wooden Indians and all.

In a quest for Indians worthy to illustrate our good folk art, the WPA artists have struck their best hunting ground in Grand Rapids, Michigan. There, Dudley A. Waters owns a collection of 41 figures, rated as the biggest and most famous gathering of wooden Indians in America.

"Wooden Indians" describes the collection briefly, for want of a better short name. But not all the statues are Indians, and not all are wooden.

In the latter part of the nineteenth century, some cigar store figures were cast in metal. And then, too, there were some tobacconists who wanted to be different, and so they ordered some other kind of wooden figure, not an Indian, carved for a sign.

These novelty seekers would order a long-bearded wooden Turk, or a Sir Walter Raleigh, or an Uncle Sam or a Goddess of Liberty. One dealer welcomed customers himself, by having his own portrait figure carved in wood, all dressed up in the uniform of the military company he belonged to.

Lord Dundreary was another bright idea in the search for something different. This comedy Englishman, with his affected ways, struck America's funnybone in a big way when the elder Sothern acted the role in a stage hit of Civil War days.

Cigar store figures even won civic fame. One wooden bandmaster was voted the first citizen of Coldwater, Michigan, when the townsfolks warred over priority of families.

Such figures as these, that joined the wooden Indian tribe, are included in the group of 36 "Indians" that the WPA artists have so far chosen for the art

INDIANS CARVED, TOO

White men carved wooden Indians, and Indians carved wooden white men. In Panama, Indian doctors still use canes bearing the portrait of Dr. William Patterson, because they think the old Scottish doctor will help them cure the sick. The two canes shown here are in the U. S. National Museum.

index. The artists have made water color sketches of the statues, so that the figures can be seen in their true colors in the portfolio.

It is easy to understand why Americans have taken cigar store art lightly, particularly the Indian figures. At first glance, a wooden Indian is apt to remind you of a puzzle—the kind labeled, "what's wrong with this picture?"

Feathers Wrong

You look up at the headdress, and instead of the stiff feathers from an eagle or hawk that an Indian would have stuck there, you may find a wooden Indian nonchalantly wearing droopy, curling feathers. It looks queer, and a little foolish.

There must be a reason for those feathers. Perhaps it can be traced to the Pocahontas influence. Remember Indian Princess Pocahontas was carried to England and received at Court, after she married John Rolfe. Her portraits then show her in formal attire, holding an ostrich feather fan. So, when honest woodcarvers tackled a Pocahontas job, they may have been awed into giving her plumes instead of Indian feathers for her hair. Or, perhaps there is another explanation, for xylanthropologists to uncover.

From the headdress, your eye wanders critically over the wooden Indian's costume, and you wonder why he, or she, is so bundled in clothes. The tobacco-leaf skirt, so often worn by these figures, is a good advertising idea. But why a knee-length petticoat under the grass skirt? And some Pocahontases in wood even have laced-in waists like something out of Godey's Lady's Book. It is most un-Indian.

There's a reason for everything. And the over-dressed cigar store Indian girls doubtless were considered pretty daring in their day, with knees showing, and right on the street, too. Early colonists got used to seeing redskins in their native costumes, which were often scant. But later city-bred Americans weren't used to it. Don't forget the chief vogue of the wooden Indian was in the Victorian era.

There's no denying that wooden Indians aren't always good as Indians, realistically. But as folk art, with their quaintness traced to psychological reasons, they have a charm of their own.

British Origin

Probing their origin leads back to the days when Pocahontas herself was alive, according to some historians of the wooden Indian tribe. That was in James the First's reign, and apothecary shops sold the American tobacco in England.

To mark the counter where tobacco was sold, they set up a sign, in the usual English fashion of contriving some sort of sign for each important line of goods. The baker's sign was a sheaf of wheat outside his door. The cutler had a pair of shears for a sign. The tobacco sign at first was a Negro boy clad in tobacco leaf kilt, possibly because the British confused Indians who smoked tobacco with Negroes who raised it in Virginia. Or possibly, these woodcarvers knew too little about Indians to make any better portrait.

In America, there was no such confusion. Indians were well known to be the first people to smoke tobacco, and the ones who introduced the weed to white men. So, Indians became the prevailing cigar ads.

While white men carved Indians, the Indians were carving white men from wood, and making them look just as quaint as the red men in front of cigar stores. Not that the Indians were trying to get even. Nor did they want to imitate the white man's notions of shopkeeping. They were not turning out wooden white men to advertise guns, glass beads, or saddles. The wooden white men served in magic, or to further the social ambitions of some red man or his wife.

Scientific explorers have been bringing to light some of these wooden white men, found during visits to remote tribes, thereby shedding light on what white men look like to Indians, as subjects for art.

Wooden Scot

Curious Indian staffs, now in the U. S. National Museum at Washington, D. C., are carved at the top with the portrait of an unmistakable Scotsman. These staffs have been prized possessions of Indian medicine men in jungles of northern South America and Panama. And the Scot is not merely a white man, but is a picture of Dr. William Patterson, who lived in Panama about 1700.

So marvelous were the cures wrought by this doctor, in Indian estimation, that they made him their god of medicine. His cult is still growing, spreading through a wide region of the tropics. An Indian medicine man who has a wooden image of Dr. Patterson can consult with his departed Scottish colleague and get help in treating patients, so these Indians believe.

The best Indian carvers have been remarkably careful in costuming Dr. Patterson. Some Dr. Pattersons are carved wearing old-fashioned Sunday best, with high hat and green frock coat. Other Dr. Pattersons wear walking togs, with cap on head and stout cane in hand, just as the good doctor must have appeared when he went his rounds in Panama, over 200 years ago.

THREE OF A KIND

Three variations on the wooden Indian theme: The bandmaster was a famous figure in Coldwater, Michigan, where he was once voted First Citizen. The Indian maid shows how Victorian propriety dressed an Indian maid in knee-length skirt and long-sleeved blouse. The bearded Turk was the choice of a tobacconist who wanted novelty.

Whatever the costume, though, there is no mistaking the sharp, long-nosed profile of this character. The least skillful Indian carver gets the beak-like nose, even if he fails even to attempt European costumes. The most skillful attain a clever portrait.

Nowadays, the doctor may be portrayed riding an airplane for speed. One of these toy-like carvings has two long-nosed figures flying in acrobat style on the wings of the plane. After all, if one Dr. Patterson is good in magic, two Dr. Pattersons ought to be unbeatable.

Up Alaska way, scientific records show the most curious wooden white man of them all, on an Indian totem pole.

The story is told by Herbert Krieger, ethnologist of the U. S. National Museum, who has an old picture of this pole. He says that a Secretary of the Interior visited Alaska just after the Civil War. One Indian who played host to the great man was so impressed by the honor that later on, when it was time to set up his totem pole, it seemed right and proper to put high on it a portrait of this official from Washington.

The Indian artist carved the frock coat, checked trousers, and stove-pipe hat. But when it came to the face, he didn't know what the visiting white man had looked like. But he did find a newspaper picture of Abraham Lincoln. So the features of Lincoln were combined with the portrait, and everybody was satisfied.

Another totem pole with a wooden white man standing stiffly on top was ordered for the social prestige of an Indian woman. She was first of her tribe to sight a white man.

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Science News Letter, November 13, 1937

"Monkey's dinner bell" is the nickname of a South American plant with seed pods that pop loudly when ripe.

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STONE AGE HOME

Housekeepers of 4,000 years ago were not nearly so primitive as many suppose, this restoration of a Neolithic house shows. The illustration on the front cover of this week's SCIENCE NEWS LETTER shows the exterior of timber-frame construction filled in with clay-plastered panel.

ARCHAEOLOGY

Rebuild European Homes Of Forty Centuries Ago

See Front Cover

HOUSES in which our ancestors lived at the time of Christ, and 2,000 years before then, are shown restored in full size and original condition at a new open-air museum in the North German city of Luebeck.

They may be considered ancestral homes of Englishmen as well as of Continental Germanic-speaking peoples, for the tribes that colonized Britain and gave rise to what we call the Anglo-Saxon culture started from this part of the European mainland.

The two houses stand a little distance from each other in the park, each an exact restoration in architecture, building materials and interior furnishings, according to the best information scientists have been able to obtain.

The restoration of the older of the two houses, showing a New Stone Age farmstead of about 2000 B. C., is a rectangular building with a steeply pitched roof of thatch. The ridgepole of the roof is supported on two stout upright posts and projects at either end.

The framework of the house is of stout, rough, unsquared timbers, and the spaces between are filled in with panels of "wattle-and-daub," that is, coarse wicker work plastered with clay. The windows are square, and quite small.

Within, there is a central hearth of stones, with a hole in the roof to let the smoke escape. There is no chimney. Shelves against the wall and strings from the beams support the cooking and table utensils—well-shaped and neatly decorated pottery vessels of assorted shapes and sizes. The man's weapons—bow with stone-tipped arrows, spear, and stone war ax—lean against one of the wooden supporting posts.

In a second room to the rear are stored supplies and a stone handmill for grinding the grain. Women worked hard in those early days.

The second house, dated about the beginning of the Christian era, shows

a considerable advance over the earlier type, yet reveals also its evolutionary connection with it. It is still rectangular with a straw-thatched, steep-pitched roof, but it is larger and is built entirely of logs. Indeed, it resembles rather strongly the log cabins of pioneer America. It is surrounded by a fence with posts set firmly in the ground and woven together with a lattice of stout branches.

Within, the arrangements and furnishings show vividly the advantages gained by the introduction of iron tools. The inner sides of the logs are squared off, and the supporting posts are also squared. There are benches and a table of good smooth boards, not only well fitted but artistically carved.

The central open fireplace still lacks a chimney, although there is a kind of flue supported on the rafters, that helps to lead the smoke toward the smoke-hole in the roof. Over the fire a big bronze kettle is suspended on iron chains.

The same building was occupied by both the family and their farm animals, as many of the older farmhouses in Europe are today. In those earlier times, this was necessary for the protection of livestock from wild beasts and human foes. The central hearth provides the separating zone; at one end the stalls, at the other the living quarters for the family. In the more recent farmhouses, as in Lower Saxony, walls separate living quarters from stable, but in this ancient dwelling the busy housewife tending her fire could keep an eye on how things were going throughout the establishment.

In the living quarters the shelves and other furniture are more numerous than in the Neolithic house, but most of the table and kitchen ware (with the exception of the big bronze kettle) are still of pottery and much the same in pattern as those of 2000 years earlier—as indeed a great deal of pottery is today. A notable feature is a stone quern or handmill for grinding the family's grain.

The man's equipment for war is quite different from that of his Neolithic grandsire; a stout shield and a heavy iron sword, hung from pegs in the wall. Iron also gives strength and edge to the tools of peace, the axes, knives, and farm implements.

The development of this type of house in northern Germany has considerable historical and cultural significance. Older than the "square house" over practically the whole of Europe, was the "round house." The latter type of construction was still used in the Celtic countries in early historic times. But the people who lived in square houses gradually extended their borders as far south as Greece and even eastward toward India.

From square-built log houses of the Iron Age, such as the one reconstructed in Luebeck, went forth the sword-armed warriors under Arminius who gave such rough welcome to visitors from Italy among the dark spruce trees of the Teutoberg Forest, just after the opening of the Christian era. From such houses also, a few hundred years later, went that first great tide of emigrants who crossed the North Sea and gave the name of one of their tribes to the land that had before been known only as Britain—Angle-land, or England.

Science News Letter, November 13, 1937

HOME, 1 A. D.

This house of the beginning of the Christian era had central hearth with big cooking kettle of bronze, pottery vessels on shelves, and in the background well-carpentered and carved table and long seat.

Ruins of about 500 Roman villas are known in England.

●RADIO

November 18, 3:30 p. m., E.S.T.

ROMANCE OF TUNG OIL—C. C. Concannon, Chief of the Chemical Division of the U. S. Bureau of Foreign and Domestic Commerce.

No Program on Thursday, November 25, Thanksgiving Day.

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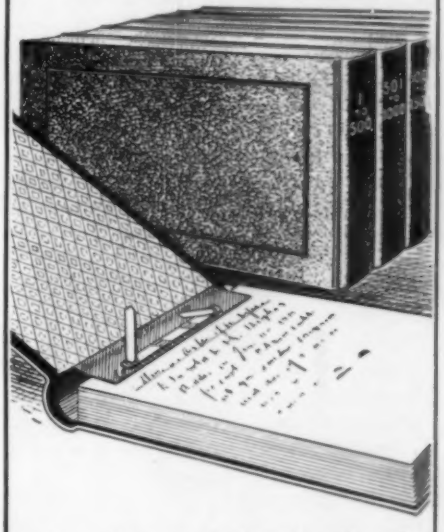

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From Page 307

A person who accepts this belief will ignore practical avenues for the peaceful settlement of international disputes.

"To those who believe that man's 'aggressive instincts' cause a war, let us ask this question: Whose aggressive instincts? Those of the men who fight the war, or those whose acts lead into the war? There is a confusion of thinking here for many people. Only superficially is a war like two men fighting. When two men get into a *personal* fight, each knows why he is fighting and has the alternative of not fighting if the stakes are not worth his efforts. In case of war, on the other hand, the psychologist sees people fighting who are (for the most part) prevented from knowing the real reasons for the war, and are instead artificially motivated by propaganda composed (as we now know) in many cases of utter falsehoods.

"Even if wars were like individual conflicts, the psychologist might still ask the question: Does society tolerate the settling of individual disputes by fighting? It does not. Human beings have accepted courts of law in place of the primitive 'eye for an eye.' No one frets because his impulses to fight over property, differences of opinion, and such matters, are suppressed. Nor is any harm done to individuals by this interference. Then why should we say that because of human nature, nations *must* fight? Psychologists see the possibilities of adequate techniques which can and should be established to keep the world at peace.

"From any viewpoint, the damages of war are tremendous. We, as psychologists, note particularly the great increase in numbers of mental breakdowns, the ruin of many personalities through shocks and strains, the irremediable harm done to those who are mangled and disfigured, the devastation of economic depressions which follow war—these alone are sufficient, we think, to overbalance any conceivable benefits from war.

"But we must add to these the great loss of human values, the destruction of our moral standards, which are an inevitable part of war. We spend years teaching our children the sanctity of human life, the rights of other people to freedom of action, possession of property, etc. We punish violators severely. But, as soon as war is declared, we tell young men to kill, maim and hurt other men; to destroy homes and lay waste cities; to bomb and gas women and children. Such actions inevitably leave their marks upon the characters of these men. Indeed, we know from the post-war years that such damage to personalities was done, and that it can never be completely undone.

"War is not inevitable, psychologically. It is not part of human nature. It is fought by men who often do not know why they are fighting, doing things which are repulsive to them but which they have been told they must do. It can be prevented. If we learn how to discount the propaganda of war-makers and how to insist upon the peaceable adjustment of international conflicts (as we have upon the peaceable adjustment of individual conflicts), there is no psychological reason for wars to continue.

"This statement is issued by the Council of Directors of the Society for the Psychological Study of Social Issues, a national organization of psychologists formed for the purpose of studying social problems and spreading psychologically correct interpretations of them. It is specifically emphasized that this is the statement of the *entire* Council."

Science News Letter, November 13, 1937

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ORNITHOLOGY

NATURE RAMBLINGS

by Frank Thone

Housing Program

WILDLIFE conservation is usually thought of in terms of big areas of land and water, under national or state administration, and with staffs of scientifically trained specialists to take care of them. A great many people have got into the notion that in such matters they may, even must, "let Uncle Sam do it."

This idea is true enough, for some species and for certain particular purposes. You cannot build herds of elk or bison on half-acre lots, and if you want to restore wild geese and ducks to the point where thousands of sportsmen can get good shooting again you will have to plan lakes and marshes in terms of townships.

But the little lives of the thickets, especially the small birds that everybody loves, can be fostered successfully in town parks and picnic grounds, along highways and railroad rights-of-way, even in semi-rural back yards. All it requires is a little intelligent cooperation with nature. Give the birds homesites of the kinds they like, and you will not lack for feathered tenants.

A surprisingly large number of practical pointers are crowded into the few pages of a new Department of Agriculture pamphlet entitled *Local Bird Refuges,* by W. A. McAtee of the Bureau of Biological Survey (Farmers' Bulletin No. 1644). Supplementary mimeographed sheets tell the best species of trees and shrubs to plant, according to the country's ten bio-climatic regions.

Tolerate volunteer thickets like sumac and wild plum; don't keep the ground mowed bare along roadsides; plant desirable food-bearing bushes where they are lacking; suppress the starved stray cat, are a few of the broad general suggestions good everywhere.

Science News Letter, November 13, 1937

•First Glances at New Books

Additional Reviews On Page 320

History

A CHILD'S STORY OF THE WORLD FROM THE EARLIEST DAYS TO OUR OWN TIME —Donald Culross Peattie, illus. by Naomi Averill—*Junior Literary Guild and Simon and Schuster,* 74 p., illus. in color, $2.50. Telling the story of man from the Stone Age to the present, so briefly and in language for children, is quite an undertaking. A captious anthropologist might worry over the telescoped version of a few hundred thousand years of man's beginnings, but at least the author writes in short sentences, plain statements, and is interesting. The colored pictures that adorn the pages are highly decorative.

Science News Letter, November 13, 1937

History—Geography

MAP MAKERS—Joseph Cottler and Haym Jaffe; illus. by Frank Butler—*Little, Brown,* 293 p., $1.75. Written for young readers, these career stories of 18 explorers are told with lively dialog and exciting incident. It is interesting to find that, while the stories move swiftly, the authors manage to capture atmospheres as different as Livingstone's Africa, Amundsen's polar background and Beebe's undersea realms.

Science News Letter, November 13, 1937

Travel

TOMBS, TRAVEL AND TROUBLE—Lawrence Griswold—*Hillman-Curl,* 337 p., $3. Mr. Griswold's exploring urge has carried him to some interesting parts of the world, and he displays unusual facility in telling what a stay-at-home might want to know about "tombs, travel, and trouble."

Science News Letter, November 13, 1937

Zoology

LIFE IN THE ANIMAL WORLD—F. H. Shoosmith—*McBride,* 278 p., illus., $2.50. A popular zoology book by a British author, treating animal life as a series of functions to meet specific needs: food, locomotion, care of young, etc. Illustrations, though not profuse, are well chosen.

Science News Letter, November 13, 1937

Entomology—Biography

FRAGMENTS OF ENTOMOLOGICAL HISTORY: INCLUDING SOME PERSONAL RECOLLECTIONS OF MEN AND EVENTS—Herbert Osborn—*Published by author, c/o Ohio State Univ., Columbus, O.,* 394 p., illus., $5. Although conscientiously labeled "fragments" by the author, the contents of this book are important fragments, not found in such convenient form elsewhere. Thus, there are historical sketches, full of names and dates, of such things as experiment station entomology, entomological publications, etc.; and the section headed Personal Sketches is a veritable Who's Who of entomologists living and recent.

Science News Letter, November 13, 1937

Home Economics

THE FAMILY'S FOOD—Faith Lanman Gorrell, Hughina McKay, Frances Zuill —*Lippincott,* 630 p., illus., $1.68. Revision of an attractive and informative text book on buying, cooking, and serving foods. It covers a great deal of ground, teaching high school students to deal with food problems in an average family.

Science News Letter, November 13, 1937

Plant Physiology

STUDIES ON WHEAT GROWN UNDER CONSTANT CONDITIONS—H. L. van de Sande-Bakhuyzen—*Food Research Institute,* 400 p., $4. Most experiments on fertilizer requirements, water relations, etc., of plants, however valuable they may be in terms of immediate applicability, are not sufficiently exact in their methods to yield basic data. This monograph records thorough and well-thought-out efforts to obtain really significant data on the growth of one important crop plant under scientifically satisfactory environment conditions.

Science News Letter, November 13, 1937

Botany

BOTANIC GARDENS OF THE WORLD; MATERIALS FOR A HISTORY—*Brooklyn Botanic Garden,* 204 p., $2. Brooklyn Botanic Garden Record, Vol. XXVI., No. 3, July 1937. A listing that will be eagerly welcomed by botanists, horticulturists, and museologists all over the world. Data include location, date of establishment, sponsorship, name of director, area, number of sheets in herbarium, size of library, hours open to public, etc.

Science News Letter, November 13, 1937

Chemical Engineering

MODERN PLASTICS: Catalog, Directory, October, 1937—*Breskin & Charlton,* 342 p., illus., $2. The catalog number of a technical journal devoted to one of the newest chemical industries, lavishly illustrated with examples of what is being made from synthetic resins. Charts and technical articles make up the bulk of the journal.

Science News Letter, November 13, 1937

History of Astronomy

ASTRONOMICAL THOUGHT IN RENAISSANCE ENGLAND—Francis R. Johnson—*Johns Hopkins,* 357 p., $3.25. A history of one phase of the history of science in England during the century and a half of intellectual ferment from 1500 to 1650. By limiting his field, the author has given himself scope to explore with scholarly thoroughness the modest portion he has taken to be his province. A highly useful appendix consists of an annotated list of all astronomical works printed in England prior to 1640.

Science News Letter, November 13, 1937

National Parks

BOB FLAME IN DEATH VALLEY—Dorr G. Yeager—*Dodd, Mead,* 238 p., $2. This fictionalized account of Death Valley, centering about the ranger figure developed by Mr. Yeager in earlier books about other national parks, offers a great deal of information about Death Valley in a form most acceptable to many young minds who prefer some adventure along with their geography and history.

Science News Letter, November 13, 1937

Fishing

BATTLES WITH MONSTERS OF THE SEA —F. A. Mitchell-Hedges—*Appleton-Century Co.,* 349 p., $4. Big game fishing with the accent on the *big.* Jewfish, sharks, barracuda, rays, sawfish, and a few reptiles like alligators and big turtles. A fish story wherein the fish are already so big "there is no need to lie." And photographs to prove it.

Science News Letter, November 13, 1937

Geography—Sociology

ICELAND, A LAND OF CONTRASTS—Hjalmar Linroth; Trans. by Adolph B. Benson—*Princeton Univ.,* 234 p., $3.50. In Iceland much of the old has survived until now, and a cultural struggle of great interest is going on there. Whether the machine age will finally put the old ways to rout, or blend with them, remains to be seen.

Science News Letter, November 13, 1937

Economics

WOMEN IN THE ECONOMY OF THE UNITED STATES OF AMERICA—Mary Elizabeth Pidgeon—*Govt. Print. Off.,* 137 p., 15 c. See page 308.

Science News Letter, November 13, 1937

Biology

ASCARIS: THE BIOLOGIST'S STORY OF LIFE—Richard Goldschmidt—*Prentice-Hall,* 390 p., illus., $3.25. See page 312.

Science News Letter, November 13, 1937

•First Glances at New Books

Additional Reviews On Page 319

Paleontology

ANIMALS ON THE MARCH—W. Maxwell Reed and Jannette M. Lucas—*Harcourt Brace*, 335 p., $3. The story of the evolution of animals, told by a pair of masters at the craft of popular science exposition, and beautifully illustrated, mainly with reproductions of restoration drawings from the American Museum of Natural History. If you (or any of your junior kinsmen) liked *The Earth for Sam* and the other "Sam" books, here is a no-mistake purchase for your early Christmas shopping.

Science News Letter, November 13, 1937

Geophysics

TRANSACTIONS OF THE AMERICAN GEOPHYSICAL UNION, EIGHTEENTH ANNUAL MEETING, APRIL 28, 29, 30, 1937, WASHINGTON, D. C. REGIONAL MEETING JUNE 21 TO 26, 1937, DENVER, COLORADO. PART I: REPORTS AND PAPERS, WASHINGTON, D. C. GENERAL ASSEMBLY AND SECTIONS OF GEODESY SEISMOLOGY, METEOROLOGY, TERRESTRIAL MAGNETISM AND ELECTRICITY, OCEANOGRAPHY, AND VOLCANOLOGY, 264 p., illus., $1.75. PART II: REPORTS AND PAPERS SECTION OF HYDROLOGY AND SOUTH CONTINENTAL DIVIDE SNOW-SURVEY CONFERENCE, 398 p., illus., $2.25—*National Research Council*. These two volumes are a mine of up-to-date technical information which must be worked as a mine, with much labor, because of a very inadequate index. Very small figures and type make these reports extremely difficult to use. Despite these disadvantages, however, the two volumes will be of extreme value to the technical worker who needs accurate information about the latest work in his specialty.

Science News Letter, November 13, 1937

Physics

INTRODUCTION TO FERROMAGNETISM—Francis Bitter—*McGraw-Hill*, 314 p., illus., $4. One of America's foremost builders of giant electro-magnets has turned his hand to writing a definitive volume on the magnetic properties of iron. He pays great attention in this book to three fundamental problems of the physicist studying the structure of matter and attempts to show in what way the use of electro-magnetism will help solve these riddles.

Science News Letter, November 13, 1937

Physics

APPLIED FLUID MECHANICS—Morrough P. O'Brien and George H. Hickox—*McGraw-Hill*, 360 p., $3.50. The behavior of fluids in theory and practice, with emphasis on the latter. The scope of the book is wider than a first thought might indicate for it covers the mechanics of gases as well as liquids, and goes into internal fluid mechanics as well.

Science News Letter, November 13, 1937

Mathematics

PREVIEW OF MATHEMATICAL ANALYSIS—Aaron Frelich, H. H. Shanholt and Joseph P. McCormack—*Silver Burdett*, 137 p., 60 c. A short text designed for the advanced high school mathematics student who wishes to prepare for the Gamma examination of the College Entrance Examination Board. It covers briefly the theory of equations, permutations, combinations, probability and differential calculus.

Science News Letter, November 13, 1937

Mathematics

USEFUL MATHEMATICS. A HIGH-SCHOOL COURSE IN FUNDAMENTALS—Flora M. Dunn, Emmy Huebner Allen, John S. Goldthwaite, Mary A. Potter—*Ginn*, 422 p., illus., $1.32. A revision of the authors' earlier textbook, "Ninth Grade Mathematics." Covers a bit of both algebra and geometry. The book is aimed at the so-called "backward" student.

Science News Letter, November 13, 1937

Marine Zoology

AN ABRIDGED CHECK LIST AND BIBLIOGRAPHY OF WEST NORTH AMERICAN MARINE MOLLUSCA—A. Myra Keen—*Stanford Univ. Press.*, 87 p., $1.50. A multilithed publication that will be exceedingly useful to field malacologists on the Pacific coast, and to museum workers everywhere. There is a bibliography of 286 titles.

Science News Letter, November 13, 1937

Chemistry

HACKH'S CHEMICAL DICTIONARY (2d ed.)—Ingo W. D. Hackh—*Blakiston's*, 1020 p., $12.

Science News Letter, November 13, 1937

Mathematics

ALGEBRA FOR TODAY. FIRST YEAR—William Betz—*Ginn*, 565 p., $1.36. A high-school mathematics text.

Science News Letter, November 13, 1937

Chemistry

LABORATORY EXERCISES AND PROBLEMS IN GENERAL CHEMISTRY (3rd ed.)—B. Smith Hopkins and M. J. Copley—*Heath*, 234 p., $1.76.

Science News Letter, November 13, 1937

Chemistry

EVERYDAY WITH CHEMISTRY. MINUTE STORIES OF CHEMISTRY AND ITS PLACE IN OUR EVERYDAY LIFE—H. H. Bunzell and Samuel Nisenson — *Grosset & Dunlap*, 128 p., illus., $1.25. Dr. Bunzell writes 78 brief sketches outlining the bases of chemistry and its applications to modern life. Everyday language plus the lavish illustrations by Mr. Nisenson make this a good start for either the curious youngster or the hurried grown-up whose interests are generally outside the range of science.

Science News Letter, November 13, 1937

Telegraphy—Biography

A SAGA OF THE SEAS: THE STORY OF CYRUS W. FIELD AND THE LAYING OF THE FIRST ATLANTIC CABLE—Philip B. McDonald—*Wilson-Erickson*, 288 p., illus., $3. This book is the story of the laying of the first transatlantic telegraph cable, the faith, the perseverance of Cyrus W. Field to achieve this cable, and the ingenuity of Lord Kelvin and the other British scientists to make it possible from a technical standpoint.

Science News Letter, November 13, 1937

Radio Engineering

EXPERIMENTAL RADIO (4th ed)—R. R. Ramsey—*Ramsey Pub. Co.*, 196 p., $2.75.

Science News Letter, November 13, 1937

Chemistry

ELEMENTARY CHEMISTRY, WITH PRACTICAL APPLICATIONS (2d ed.)—Imo P. Baughman—*Lea & Febiger*, 296 p., $2.75. A small text on chemistry designed for use by junior college groups.

Science News Letter, November 13, 1937

Chemistry

METHODS OF QUANTITATIVE CHEMICAL ANALYSIS: AN INTRODUCTION TO THEIR THEORY AND TECHNIC—M. G. Mellon—*Macmillan*, 456 p., illus., $3. A text prepared by a Purdue University professor. A balance is maintained between theory and technique.

Science News Letter, November 13, 1937

Medicine—Aeronautics

FLYING VISTAS: THE HUMAN BEING, AS SEEN THROUGH THE EYES OF THE FLIGHT SURGEON—Isaac H. Jones—*Lippincott*, 255 p., $2. The author's experiences in caring for the health of fliers is used in this book to make a sugar coating for facts about physiology and health which are equally important to the man in the street and to the pilot in the air.

Science News Letter, November 13, 1937